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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,612	01/16/2002	Candice Hellen Brown Elliott	CLRV-003	9018

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EXAMINER	
CASCHERA, ANTONIO A	
ART UNIT	**PAPER NUMBER**
2676	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/051,612	BROWN ELLIOTT ET AL.	
	Examiner	Art Unit	
	Antonio A. Caschera	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18 and 34-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 34-42* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *05/09/02, 10/11/02, 04/02/03, 07/15/03 & 02/11/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for domestic priority under 35 U.S.C. 119(e).

Information Disclosure Statement

2. The information disclosure statements filed 05/09/02, 10/11/02, 04/02/03, 07/15/03 and 02/11/04 fail to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the foreign patent documents and non-patent literature publications referred to therein have not been considered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 5-7, 10 and 14-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Weldy (U.S. Patent 6,804,407 B2).

In reference to claims 1 and 10, Weldy discloses a method of converting a plurality of input signals to output signals wherein a function of both unknown recorded signal levels and unknown signal sensitivities makeup the plurality of input signals (see column 3, lines 6-10). Weldy also discloses the input signals comprising of three color channels, red, green and blue (see #S1 and "rgb" of Figure 1). Weldy discloses sample areas in the form of data values for each color channel of an input signal derived from scanning an image (see column 3, lines 38-40). Weldy then discloses the samples to be spatially transformed and passed through a high or low pass filter using weights in certain neighborhoods of pixels (see column 3, lines 40-50). Weldy discloses calculating a luminance value formed using samples taken from each channel and the weighting values determined from the above filtering step (see column 3, lines 50-52). Note, the office interprets the operation of filtering the already sampled values in specific pixel neighborhoods of Weldy functionally equivalent to the determining of a resample area for each color emitter as the weight values are applied to each rgb color value used in calculating an overall luminance in Weldy. Weldy further discloses the weight values derived using one of three methods, two of which involve calculations using fractions including values which represent functions of values located in the neighborhood filtering area and rgb color values (see columns 4-6, lines 33-40). Further, referring to columns 5-6, lines 67-5, the weight values k1-k3 are calculated using standard deviation values of each color channel (1-3=rgb respectively) in the neighborhood pixel, represented by both the numerator and denominators in the fractions of equations 16a-c (see columns 5-6, lines 67-5). Note, the office interprets such numerators and

denominators of Weldy functionally equivalent to applicant's fraction formation. Note, the office interprets that the standard deviation values represent the three color channels which at least partially overlap one another as RGB color gamut values commonly overlap one another forming all shades of colors. Weldy also discloses multiplying the weight factors (k1-k3) by each rgb transmittance data point and adding these products together to form a luminance value (see column 3, lines 50-57).

In reference to claims 5 and 14, Weldy discloses all of the claim limitations as applied to claims 1 and 10 respectively above. Note, the office interprets Weldy to inherently disclose using luminance values to drive some type of display as Weldy discloses luminance values to broadly be defined as a linear combination of red, green and blue component values (see column 2, lines 32-34) which are normally used to control output on display devices, output signals derived from these calculated luminance values. Further, image processing methods, as those disclosed in Weldy, are performed to modify or alter data which, ultimately without some type of display, presentation to the user or final output, lacks a purpose to be processed and therefore the office interprets Weldy to inherently perform such image processing so the results can be displayed and benefited from by a user.

In reference to claims 6 and 15, Weldy discloses all of the claim limitations as applied to claims 1 and 10 respectively above. Note, the office interprets Weldy to inherently disclose storing the luminance values calculated as these values are further used in calculating output signals (see column 3, lines 18-21) therefore, they must be, at least temporarily stored, in order to perform further processing thereupon.

In reference to claims 7 and 16, Weldy discloses all of the claim limitations as applied to claims 1 and 10 respectively above. Note, the office interprets that Weldy inherently discloses transmitting luminance values as these values are inherently stored and transferred or sent out from memory for other processing as disclosed by Weldy, as the output values are further processed from the calculated luminance values (see column 3, lines 18-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-4, 8, 11-13, 17 and 34-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldy (U.S. Patent 6,804,407 B2).

In reference to claims 2-4, 11-13 and 35-37, Weldy discloses all of the claim limitations as applied to claims 1, 10 and 34 respectively. Weldy does not explicitly disclose storing the set of fractions or weight values in one of either display hardware, software or firmware however, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to store the weight values and associated calculations of Weldy in a storage of either hardware, software or firmware form. Applicant has not disclosed that specifically storing the data in display hardware, software or firmware provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the inherently taught storing features of

image processing systems because the exact location of storing data is seen as a matter of design choice as preferred by the designer and to which best suits the application at hand. Therefore, it would have been obvious to one of ordinary skill in this art to modify Weldy to obtain the invention as specified in claims 2-4, 11-13 and 35-37 respectively.

In reference to claims 8, 17 and 41, Weldy discloses all of the claim limitations as applied to claims 1, 10 and 34 respectively above. Weldy does not explicitly disclose the input signals having one-half as many three color pixel elements horizontally and vertically as the output display however, at the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement a display wherein the display is double the size and therefore comprising double the number of three color pixel elements in both horizontal and vertical directions. Applicant has not disclosed that implement such a specific display provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with inherently taught displaying techniques of Weldy because the manner in which the display data is displayed using a specific larger display is a matter of design choice as preferred by the designer and to which best suits the application at hand. Further, the designer of the invention may chose to implement the image processing techniques on any scale display therefore making such a limitation a design choice. Therefore, it would have been obvious to one of ordinary skill in this art to modify Weldy to obtain the invention as specified in claims 8, 17 and 41 respectively.

In reference to claim 34, Weldy discloses a method of converting a plurality of input signals to output signals wherein a function of both unknown recorded signal levels and

unknown signal sensitivities makeup the plurality of input signals (see column 3, lines 6-10). Weldy also discloses the input signals comprising of three color channels, red, green and blue (see #S1 and "rgb" of Figure 1). Weldy discloses sample areas in the form of data values for each color channel of an input signal derived from scanning an image (see column 3, lines 38-38-40). Weldy then discloses the samples to be spatially transformed and passed through a high or low pass filter using weights in certain neighborhoods of pixels (see column 3, lines 40-50). Weldy discloses calculating a luminance value formed using samples taken from each channel and the weighting values determined from the above filtering step (see column 3, lines 50-52). Note, the office interprets the operation of filtering the already sampled values in specific pixel neighborhoods of Weldy functionally equivalent to the determining of a resample area for each color emitter as the weight values are applied to each rgb color value used in calculating an overall luminance in Weldy. Weldy further discloses the weight values derived using one of three methods, two of which involve calculations using fractions including values which represent functions of values located in the neighborhood filtering area and rgb color values (see columns 4-6, lines 33-40). Further, referring to columns 5-6, lines 67-5, the weight values k1-k3 are calculated using standard deviation values of each color channel (1-3=rgb respectively) in the neighborhood pixel, represented by both the numerator and denominators in the fractions of equations 16a-c (see columns 5-6, lines 67-5). Note, the office interprets such numerators and denominators of Weldy functionally equivalent to applicant's fraction formation. Note, the office interprets that the standard deviation values represent the three color channels which at least partially overlap one another as RGB color gamut values commonly overlap one another forming all shades of colors. Weldy also discloses multiplying the weight factors (k1-k3) by

each rgb transmittance data point and adding these products together to form a luminance value (see column 3, lines 50-57). Weldy does not explicitly disclose a machine readable medium comprising a set of instructions implementing the above methods however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the above image processing methods of Weldy using a computer or processing device, which is commonly known to implement some sort of machine readable medium comprising executable instructions, in order to execute such image processing steps for use on electronic devices such as, display monitors, digital cameras, facsimile machines, photocopiers, scanners and printers.

In reference to claim 38, Weldy discloses all of the claim limitations as applied to claim 34. Note, the office interprets Weldy to inherently disclose using luminance values to drive some type of display as Weldy discloses luminance values to broadly be defined as a linear combination of red, green and blue component values (see column 2, lines 32-34) which are normally used to control output on display devices, output signals derived from these calculated luminance values.

In reference to claim 39, Weldy discloses all of the claim limitations as applied to claim 34. Note, the office interprets Weldy to inherently disclose storing the luminance values calculated as these values are further used in calculating output signals (see column 3, lines 18-21) therefore, they must be, at least temporarily stored, in order to perform further processing thereupon.

In reference to claim 40, Weldy discloses all of the claim limitations as applied to claim 34. Note, the office interprets that Weldy inherently discloses transmitting luminance values as these values are inherently stored and transferred or sent out from memory for other processing

as disclosed by Weldy, as the output values are further processed from the calculated luminance values (see column 3, lines 18-21).

5. Claims 9, 18, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldy (U.S. Patent 6,804,407 B2) in view of Keely, Jr. et al. (U.S. Patent 6,750,875 B1).

In reference to claims 9, 18 and 42, Weldy discloses all of the claim limitations as applied to claims 1, 10 and 34 respectively above however, Weldy does not explicitly disclose utilizing any of the display devices as recited in the claims. Keely, Jr. et al. discloses a method and apparatus for display images while increasing the perceived resolution of the images and compressing image data (see column 1, lines 15-19). Keely, Jr. et al. discloses a conventional LCD display comprising of an arrangement of three subcomponents (rgb) in a stripe configuration, per pixel (see column 2, lines 4-21 and Figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the image processing methods of Weldy with the resolution techniques using the LCD technology of Keely, Jr. et al. in order to properly display lower resolution data onto existing display technology (see column 2, lines 30-36 and column 3, lines 19-29) thereby providing an easier to view presentation to a user.

Response to Arguments

6. Applicant's arguments, see page 15 of Applicant's Remarks, filed 07/07/05, with respect to the objection of the specification have been fully considered and are persuasive. The objection of the specification has been withdrawn since minor informalities have been corrected for within the abstract.

7. Applicant's arguments filed 07/07/05 have been fully considered but they are not persuasive.

In reference to claims 1 and 10, Applicant argues that the claimed invention does not rely nor depend upon the particular input image data to be remapped as Weldy does (see page 19, last paragraph of Applicant's Remarks). Such arguments do not persuade the Office as to the novelty of the claimed invention over Weldy. The Office restates that Weldy discloses a method of converting a plurality of input signals to output signals wherein a function of both unknown recorded signal levels and unknown signal sensitivities makeup the plurality of input signals (see column 3, lines 6-10). The Office believes Weldy to disclose all of the claim limitations as disclosed in claims 1 and 10 as claim 1, for example, discloses "...converting a source pixel data of a first format...for a display of a second format..." (see lines 1-2 of claim 1), the "source pixel of a first format" equivalent to the input signals of Weldy and the "display of a second format" equivalent to the output signals of Weldy. Therefore, the Office maintains its current rejection based upon Weldy.

Applicant also argues that Weldy does not disclose creating fractional values that are based upon the effective remapping of data from a first format onto a display of another format (see page 20, 1st – 4th paragraphs of Applicant's Remarks). Applicant further provides evidence for such statement as Applicant points out that, "...Weldy does not perform the equivalent function of remapping image data from one sub-pixel format to another," (see 4th paragraph of Applicant's Remarks). The Office restates that Weldy discloses sample areas in the form of data values for each color channel of an input signal derived from scanning an image (see column 3, lines 38-40) and then the samples are spatially transformed and passed through a high or low

pass filter using weights in certain neighborhoods of pixels (see column 3, lines 40-50). Weldy further discloses the weight values derived using one of three methods, two of which involve calculations using fractions including values which represent functions of values located in the neighborhood filtering area and rgb color values (see columns 4-6, lines 33-40). Certainly, the effects of the sampling in each color channel and filtering of pixel values definitely provides for a remapping of image data from one sub-pixel format to another using the fractional weight data since luminance values are computer and color is maintained constant while the elimination the contribution of unknown signal sensitivities is performed (see column 3, lines 15-18). Therefore, the Office broadly interprets Weldy to anticipate the claimed language of claims 1 and 10 and maintains its current rejection based upon Weldy.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella, can be reached at (571) 272-7778.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

aac

8/24/05